Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A carbon-containing component comprising a protective coating, wherein the carbon-containing component is selected from the group consisting of graphite, amorphous carbon, carbon fibers and carbon-carbon composites; and

wherein the protective coating comprises a material selected from the group consisting of:

silicon oxycarbide (SiO_xC_y);

silicon oxynitride (SiO_xN_z);

silicon carbonitride (SiC_yN_z); and

silicon oxycarbonitride ($SiO_xC_yN_z$);

wherein $x < 2$, $y < 1$ and $z < 4/3$, and at least two of x, y, and z are greater than zero in each of said materials;

wherein the carbon (C) in the protective coating is chemically bound, and

wherein the protective coating is deposited by means of chemical vapor deposition using methylsilane and nitrous oxide.

~~non-stoichiometric compounds of silicon and carbon;~~

~~compounds of silicon, oxygen, and carbon;~~

~~compounds of silicon, oxygen and nitrogen;~~

~~compounds of silicon, nitrogen, and carbon;~~

~~compounds of silicon, oxygen, nitrogen, and carbon; and~~

~~silicon.~~

2-4. (Canceled)

5. (Original) The carbon-containing component of claim 1, wherein said protective coating has a coefficient of thermal expansion which is less than the coefficient of thermal expansion of silicon carbide (SiC).

6-9. (Canceled)

10. (Original) The carbon-containing component of claim 1, wherein carbon-containing component comprises a plate-fin heat exchanger.

11. (Original) The carbon-containing component of claim 1 wherein said protective coating has a graded composition through its thickness.

12. (Canceled)

13. (Currently Amended) A carbon-containing component comprising a protective coating, wherein the carbon-containing component is selected from the group consisting of graphite, amorphous carbon, carbon fibers and carbon-carbon composites; and

wherein the protective coating comprises a material selected from the group consisting of:

silicon oxycarbide (SiO_xC_y);

silicon oxynitride (SiO_xN_z);

silicon carbonitride (SiC_yN_z); and

silicon oxycarbonitride ($SiO_xC_yN_z$);

wherein $x < 2$, $y < 1$ and $z < 4/3$, and at least two of x, y, and z are greater than zero in each of said materials, ~~and~~

wherein the coefficient of thermal expansion of said protective coating is less than the coefficient of thermal expansion of silicon carbide (SiC).

wherein the carbon (C) in the protective coating is chemically bound, and

wherein the protective coating is deposited by means of chemical vapor deposition using methylsilane and nitrous oxide.

14-21. (Canceled)

22. (Currently Amended) A carbon-containing component comprising a protective coating, wherein the carbon-containing component is selected from the group consisting of graphite, amorphous carbon, carbon fibers and carbon-carbon composites; and

wherein said protective coating includes at least a first layer and a second layer, said first layer comprises at least one material selected from the group consisting of:

non-stoichiometric compounds of silicon and carbon;

non-stoichiometric compounds of silicon and oxygen;

non-stoichiometric compounds of silicon and nitrogen;

compounds of silicon, oxygen, and carbon;

compounds of silicon, oxygen, and nitrogen;

compounds of silicon, nitrogen, and carbon;

compounds of silicon, oxygen, nitrogen, and carbon; and

silicon; and

wherein said second layer comprises at least one material selected from the group consisting of:

silicon oxycarbide (SiO_xC_y);

silicon oxynitride (SiO_xN_z);

silicon carbonitride (SiC_yN_z); and

silicon oxycarbonitride ($SiO_xC_yN_z$);

wherein $x < 2$, $y < 1$ and $z < 4/3$, and at least two of x, y, and z are greater than zero in each of said materials,

wherein the carbon (C) in the protective coating is chemically bound, and

wherein the protective coating is deposited by means of chemical vapor deposition using methylsilane and nitrous oxide.

23. (Canceled)

24. (Currently Amended) The carbon-containing component of claim 22, wherein each of said first and second layers comprises a compound selected from the group consisting of ~~silicon carbide (SiC_y);~~ silicon oxycarbide (SiO_xC_y); silicon carbonitride (SiC_yN_z); and silicon oxycarbonitride ($SiO_xC_yN_z$), wherein $x < 2$, $y < 1$ and $z < 4/3$, and at least two of x, y, and z are greater than zero in each of said compounds.

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25. (Currently Amended) The carbon-containing component of claim 24, wherein the carbon (C) in said compound of said first and second layers is chemically bound.

26. (Previously presented) The carbon-containing component of claim 22, wherein said carbon-containing component comprises a plate-fin heat exchanger.

27. (Previously presented) The carbon-containing component of claim 22, wherein said protective coating is applied directly to a surface of said carbon-containing component.

28. (Original) The carbon-containing component of claim 22, wherein said protective coating has a coefficient of thermal expansion which is less than the coefficient of thermal expansion of silicon carbide (SiC).

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